

Summary

Asiana has taken numerous steps to enhance its training programs in recent months. In the weeks following the accident, Asiana voluntarily canceled 80 revenue flights in order to ensure that its line pilots would be available to attend special training and evaluation courses. The airline has also examined all of its training and operations programs, making a number of changes designed to further enhance safety. These enhancements include:

- *Enhanced Flight Crew Training & Evaluation:* Asiana has substantially increased the required training hours and evaluations for all phases of its training. In addition to requiring greater training time, Asiana also has increased its training focus on automation logic and capabilities of the autothrottle stall protection system. The airline has updated its ground school curriculum to emphasize the interaction between the AFDS and autothrottle functioning, and it has placed particular emphasis on the circumstances and consequences of the autothrottle's activation in HOLD mode.
- *Strengthened Flight Instructor Training:* In addition to increasing the required training hours for ground school, simulator, and OE flight instructor training, Asiana has increased its training focus on issues such as special airports, visual and non-precision approach, and monitoring.
- *Enhanced CRM Training:* Asiana has created and implemented new advanced communications and CRM courses, which include a special training focusing on monitoring, workload management, and threat and error management. Asiana has instituted a policy mandating that all pilots attend these new advanced CRM courses within one year.
- *Revamped Safety Management Structure:* Asiana has hired Akiyoshi Yamamura, an outside safety specialist with broad international experience, as the airline's new Executive Senior Vice President of Safety. Additionally, Asiana has committed to devoting additional staff to internal safety audits, flight crew training support and development, and CRM instruction. For instance, since the accident Asiana has established a 14-member safety audit team to facilitate more targeted internal reviews, an 11-member flight crew training support team to assist areas of specialized training, and a 5-member flight crew training development team to evaluate and improve training profiles and materials.

The following pages provide a more detailed presentation of Asiana's recent training enhancements.

Actions Taken in Response to SFO Accident

December 2013



Overview

Enhanced Flight Crew Training & Evaluation

For all flight crew members:

- Increased hours for basic, initial, and transition training
- Cancellation of 80 revenue flights to accommodate special training and evaluation for flight crew
- Increased training focus on automation logic and capabilities of autothrottle stall protection system
- Increased training focus on visual approaches and enhanced evaluation of visual approach performance
- Additional evaluation for captain upgrade

Strengthened Flight Instructor Training

- Enhanced flight instructor screening and selection process
- Increased required training hours on ground school, simulator, and OE training for initial flight instructors
- Increased focus on special airports, visual & non-precision approach, unstabilized approach, monitoring and standard callout

Enhanced CRM Training

- Implementation of new advanced communications and CRM courses
- Special training focusing on monitoring, workload management, and Threat & Error Management (TEM)

Revamped Safety Management Structure

- New senior executive-level position to oversee safety operations
- Additional staff devoted to internal safety audits, flight crew training support & development, and CRM instruction

Other Measures

- Revision of SMS program and company procedures & manuals (POM) to provide more detailed guidance on key issues

1. Enhanced Flight Crew Training & Evaluation



1. Enhanced Flight Crew Training & Evaluation

Training Type		Korean Gov't Standard	Asiana (previous)	Asiana (current)
Basic	Ground school	40 hrs	258 hrs	277 hrs
		Accident case study, special airports, ATC, standard callout		
	JTS (Jet Transition Simulator)		24 hrs	30 hrs
		Non-precision & high energy approach, monitoring, callouts		
Initial	Ground school	120 hrs	165 hrs	173 hrs
		Practical aircraft systems & automation, monitoring in SIM/ FTD		
	SIM training	22 hrs	26 hrs	28 hrs
		Zero Flight Time Training (ZFTT) for take-offs and landings		
	Pre-OE ground school	--	4 days	6 days
		Non-precision approach, aircraft systems & automation, Threat & Error Management (TEM)		
	Pre-OE SIM training	--	--	2 hrs
		Special airports, visual approach, non-precision high/low energy management, manual flight		

1. Enhanced Flight Crew Training & Evaluation

Training Type		Korean Gov't Standard	Asiana (previous)	Asiana (current)
Transition	Ground school	120 hrs	160-168 hrs	168-205 hrs
		Special airports, aircraft systems & automation, non-precision approach, TEM program		
	SIM training	22 hrs	22 hrs	24 hrs
		Zero Flight Time Training (ZFTT) for take-offs & landings		
	Pre-OE ground school	--	4 days	6 days
		Special airports, aircraft systems & automation, non-precision approach, TEM program		
	Pre-OE SIM training	--	--	2-4 hrs
		Increased training when transitioning between manufacturers of aircraft (i.e., Airbus<->Boeing)		
	OE training	20 legs (60 hrs)	20 legs (60 hrs)	30 legs* (90 hrs)

*If transitioning between manufacturers

1. Enhanced Flight Crew Training & Evaluation

- 80 revenue flights cut to provide for special training & evaluation of B777 flight crew
- Increased focus on high-energy visual approaches and enhanced evaluation of visual approach performance during training
- Increased focus on automation logic and functioning, including interaction between AFDS and autothrottle functioning
 - Autothrottle activation in HOLD mode when in specific AFDS pitch modes, including FLCH
 - Capabilities and limitations of autothrottle stall protection support
- Ground school instruction reinforced by focus on automation functioning during SIM training
- Increased in-house check rides for captain upgrade (2 legs -> 4 legs)

2. Strengthened Flight Instructor Training



2. Strengthened Flight Instructor Training

Training Type		Korean Gov't Standard	Asiana (previous)	Asiana (current)
Initial Flight Instructor	Ground school	--*	18 hrs	24 hrs
		Aircraft systems & automation, non-precision approach, unstabilized approach, standard callout		
	SIM training	--*	14 hrs	16 hrs
		Special airports, visual & non-precision approach, unstabilized approach		
	OE training	--*	4 legs	8 legs
		Special airports		
	OE Evaluation	--*	1 leg	2 legs
		Extended evaluation		
Recurrent Flight Instructor	OE Evaluation	Required	1 leg	2 legs (1 PF; 1 PM)
		Extended evaluation		

* Korean Flight Safety Regulations (FSRs) state that training and evaluation is required for initial flight instructors, but they do not set forth any specific requirements.

2. Strengthened Flight Instructor Training

- **More demanding selection process for instructors**
 - **Instructor Selection Committee headed by Senior VP**
 - **Evaluation interview required for all prospective IPs**
- **More rigorous training and evaluation for all flight instructors**
 - **Increased training on visual and non-precision approach**
- **Designated instructor assigned to each pilot on OE training flights to facilitate targeted feedback**
 - **Phase 1: 30% of OE flights with same instructor (2013)**
 - **Phase 2: 50% of OE flights with same instructor (2014)**
- **Enhanced safety during OE transition training flights by requiring additional safety pilot on-board**

3. Enhanced CRM Training



3. Enhanced CRM Training

Training Type	Korean Gov't Standard	Asiana (previous)	Asiana (current)
Advanced Communication Skills Course (Transition, Re-Qualification)	--	--	2 days
	Teamwork, safety culture and interpersonal communication		
Advanced CRM Course (Upgrade, Instructor Pilots)	--	1 day	3 days
	Teamwork, safety culture and interpersonal communication		
Special CRM for Instructor Pilots	--	--	1 day
	TEM program, monitoring, high & low energy approach		
Special CRM for All Pilots	--	--	2 hrs
	Safety culture, communication		
Initial CRM	Required	21 hrs	24 hrs
	Safety culture, communication		
Joint CRM	--	7 hrs	8 hrs
	Emergency procedure and evacuation in mock-up setting		

4. Revamped Safety- Management Structure



4. Revamped Safety-Management Structure

- **Revamped safety management organizational structure**
 - **Hired Akiyoshi Yamamura, an outside safety specialist with broad international experience, as Executive Senior VP of Safety**
 - **Senior EVP to serve as Chair of Instructor Selection Committee**
- **Devoted additional human resources to proactively manage safety**
 - **Established 14-member safety audit team for more targeted internal reviews**
 - **Created 11-member flight crew training support team to assist areas of specialized training**
 - **Established 5-member flight crew training development part to evaluate and improve training profiles and materials**
 - **Selected & trained 11 additional CRM instructors**

5. Other Measures



5. Other Measures

- Update SMS program to provide more detailed guidance on safety management and enhance confidential reporting system
- Revise Pilot Operations Manual
 - Update guidance on visual approach procedure, to be drafted and reviewed by task force for each aircraft type
 - Incorporate FCOM into Asiana's flight procedures and review with manufacturer (No Technical Objection)

Q&A

